RUNNING HEAD: Disentangling motivation from self-efficacy

Disentangling motivation from self-efficacy: Implications for measurement, theory-development, and intervention.

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Invited commentary in relation to: Williams, D. M., & Rhodes, R. E. (2016). The confounded self-efficacy construct: Conceptual analysis and recommendations for future research. *Health Psychology Review*. [Advance online publication] doi: 10.1080/17437199.17432014.17941998

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Citation: Beauchamp, M. R., (2016). Disentangling motivation from self-efficacy: Implications for measurement, theory-development, and intervention. Health Psychology Review, 10(2), 129-132. doi:10.1080/17437199.2016.1162666.

Link to Journal Publication - http://www.tandfonline.com/doi/full/10.1080/17437199.2016.1162666

Ever since Bandura (1977) published his seminal article articulating the conceptual bases that underpin self-efficacy theory as a unifying theory of behaviour change, the study of self-efficacy has been extensive across diverse life contexts, and in particular within the context of health behaviour change. Indeed, in his writing Bandura (1997) has repeatedly argued that "self-efficacy beliefs constitute *the key factor* of human agency" (emphasis added, p. 3). In their conceptual critique and narrative review, Williams and Rhodes (2016) provide a compelling case for why traditional measures of self-efficacy, in particular those framed in relation to the self-regulation of health behaviours, may inadvertently assess motivation rather than self-efficacy. Specifically, they contend that when participants are asked whether they 'can do' a target behaviour, such questions are interpreted in a colloquial sense in terms of whether they *will do* the behaviour, and not whether they are actually physically *capable* of performing that behaviour.

Although Williams and Rhodes emphasize that more research is clearly needed to test their 'self-efficacy-as-motivation' contention, the implications stemming from their paper have the potential to be far reaching within the field of health psychology in terms of measurement, conceptual advancement, and intervention considerations. From a measurement perspective, the authors draw from data derived from three studies by Rhodes and colleagues (Rhodes & Blanchard, 2007; Rhodes & Courneya, 2003, 2004) which found that when traditional self-efficacy measures are augmented by efforts to hold motivation constant (by adding the qualifier 'if you really wanted to') the predictive utility of those augmented measures was weaker in relation to behavioural intention than typical self-efficacy measures. The crux of these findings is that traditional self-efficacy measures (cf. Bandura, 2006), at least to some extent, unintentionally assess motivation. This, the authors conclude, has resulted in an extensive literature that reflects a *confounded self-efficacy construct* (as implied by the title of their article). Based on the authors' synopsis, it would appear that it is the operationalization (i.e., measures) of the self-efficacy construct that has been confounded

and not the construct itself. This is an important distinction, and raises important questions (or what Messick, 1995, referred to as consequential validity considerations) related to the extent to which measurement instruments need improvement and/or whether the theory itself requires revision.

Although Williams and Rhodes draw from qualitative work that points to motivational factors that may have non-trivial effects on self-efficacy ratings, research conducted in the context of health behaviour settings has yet to specifically examine the thought processes of research participants *while they are responding* to traditional self-efficacy measures (i.e., in situ). One methodological approach that has the potential to shed direct light on this question corresponds to the use of 'think aloud' protocols, a form of cognitive interviewing, whereby people articulate *in situ* exactly what they are thinking about in direct response to a specific set of questions (Oremus, Cosby, & Wolfson, 2005; Willis, 2005). Previous research has used a 'think aloud' methodology to evaluate theory of planned behaviour questionnaires (concerning binge drinking and physical activity), which revealed notable problems with item interpretation among participants (French, Cooke, McLean, & Williams, 2007). A similar approach could be used to examine participants' thought processes while responding to self-efficacy questionnaire items. Should the findings from such research provide support for Williams and Rhodes' contention, then from a methodological perspective one important approach would be to pay much greater attention to question framing. As highlighted above, one option presented by the authors is to hold motivation constant by virtue of including the qualifier 'if you really wanted to' at the end of typical self-efficacy items. Another (and fairly simple) approach would be to more clearly indicate in questions designed to assess self-efficacy, and accompanying instructions to respondents, that the items are concerned with the respondents' "confidence that they are [physically] capable of performing behaviour X". Parenthetically, the think-aloud protocol described above, would also be able to shed light on whether people interpret questions differently based on whether they ask about people's *confidence that they are capable of performing the*

behaviour in question, when compared to their *confidence that they can* (or '*could*') *do the behaviour* in question, which might be interpreted as a proxy measure of motivation.

In addition to their critique concerning the way in which traditional measures of self-efficacy are constructed (cf., Bandura, 2006), Williams and Rhodes also point to broader concerns with the conceptual framework that underpins the very basis of self-efficacy theory. Specifically, they build upon a long-standing debate that concerns whether outcome expectations might, contrary to the theoretical postulates of Bandura (1978, 1997, 2004), act as an antecedent of self-efficacy beliefs. The authors presented a compelling case, based on their review of data derived from experimental studies that outcome expectancies might in fact act as a source of self-efficacy. In building towards their suggestions for future research, and moving the field forward, Williams and Rhodes present an argument that existing measures of self-efficacy reflect an operationalization of 'can-do motivation', and that this construct be considered as a proximal determinant of behaviour.

There are other possible approaches, not articulated by the authors that might help to move the field forward. First, in addition to deriving improved measures of self-efficacy, as suggested previously, that disentangle motivation from self-efficacy, it is entirely conceivable that self-efficacy theory itself should be reworked to account for outcome expectations as a viable 'source' of self-efficacy beliefs. As several scholars in the field of health psychology have noted, psychological theories should not be considered static or immutable (Hagger, 2015; Rothman, 2004). Indeed, while psychological theories provide an important basis for generating and testing hypotheses, if and when findings suggest that a given theory or theories need refinement those amendments should be considered (Hagger, 2015; Rothman, 2004). The review provided by Williams and Rhodes suggests that outcome expectations might act as a source of self-efficacy beliefs, with data derived from experimental studies pointing to the viability of reworking some of the relations between psychological constructs within self-efficacy theory. In terms of next steps, this might involve re-

conceptualizing self-efficacy theory, and testing (through cross-lagged panel model designs), outcome expectations as both a source and consequence of self-efficacy beliefs with each affecting each other in a reciprocally deterministic manner.

A second consideration relates to a potential cautionary note related to Williams and Rhodes' concluding point on the promotion of research that examines sources of 'can-do motivation', as assessed by traditional measures of self-efficacy. If such traditional self-efficacy measures do conflate or merge perceptions of capability with motivation, it would seem essential to better disentangle the two rather than continue to assess a 'blended' construct, along with its various sources and consequences. Indeed, from a consequential validity perspective (Messick, 1995), continuing to derive responses to 'can-do motivation' questions would leave us with the same problems that were highlighted at the beginning of the authors' article in relation to traditional self-efficacy measures. That is, would measures of responses to such 'can-do motivation' questions actually reflect a person's motivation, perceived capability, or both? The implications of such diagnostic data would mean that those concerned with intervention would be less than optimally informed to bolster the participant's perceived capabilities or motivation, and thereafter the target behaviour of interest. In short, if there are problems with existing measures of self-efficacy, then researchers should modify them, rather than seeking to re-interpret what such blended/confounded measures represent.

When taken together, Williams and Rhodes' article makes a number of highly insightful observations and recommendations that have the potential to make an invaluable contribution to the field of health psychology, and indeed spur a paradigm shift in the way that self-efficacy research is undertaken and how it is utilized to inform health behaviour change interventions. As a concluding statement, the authors "recommend that researchers look beyond self-efficacy to identify the many and diverse sources of motivation for health behaviours" (p. 1). I would certainly echo the authors'

call to examine both reflective and automatic/habitual motivational factors that might be implicated in supporting behaviour change. However, if one accepts the authors' argument that traditional measures of self-efficacy have been problematic, an important next step (for the field) would appear to focus on (a) developing more precise instruments that assess self-efficacy (i.e., beliefs about what one is *capable* of accomplishing) and (b) examining the extent to which measures derived from such improved instruments predict *and* explain variance in salient health behaviour outcomes. It may be that such measures explain less variance, but may well still explain a meaningful amount of variance in those behavioural outcomes. Indeed, one should be cautious about throwing the proverbial baby out with the bathwater; targeting self-efficacy beliefs may well continue to prove to be a valuable target for health promotion intervention. In conclusion, the provocative paper by Williams and Rhodes has challenged researchers and practitioners to develop more precise measures of self-efficacy, address the fundamental conceptual bases that underpin self-efficacy theory, and develop a better understanding of the psychological constructs that are targeted through health behaviour interventions. The task for health psychology researchers is to respond to that challenge.

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